

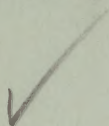
Pitzer (Geo. C.)

# ALCOHOL.

---

Alcohol as a Food, a Medicine, a Poison, and as a Luxury

—BY—



GEO. C. PITZER, M. D.



ST. LOUIS:

COMMERCIAL PRINTING COMPANY, 405 North Third Street.

1883.



Dr. F. A. CASTLE,

# ALCOHOL

AS A FOOD, A MEDICINE, A POISON AND AS A LUXURY.

—BY—

GEO. C. PITZER, M. D.,

PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE IN THE AMERICAN  
MEDICAL COLLEGE, ST. LOUIS; CLINICAL LECTURER AT THE CITY HOS-  
PITAL, ST. LOUIS; EDITOR OF THE AMERICAN MEDICAL JOURNAL;  
AUTHOR OF "ELECTRICITY IN MEDICINE AND SURGERY;"  
AND AUTHOR OF NEW WORK ON "DIRECT  
MEDICATION"—THERAPEUTICS.

---

*This Pamphlet is a reprint from the electroplates of the Author's forthcoming  
work on Direct Medication; this explains the head-lines  
and odd paging that may be observed.*

---

PRICE, TWENTY-FIVE CENTS.

---



ST. LOUIS, MO.:  
COMMERCIAL PRINTING COMPANY, 405 North Third Street.  
1883.

# ALCOHOL.

Alcohol is a colorless, limpid fluid, having a burning taste, and an agreeable fruity odor. Its chemical composition is carbon, hydrogen and oxygen. It combines with water in all proportions. When pure, or nearly so, it is very combustible, burning with a flame but little luminous, but producing intense heat. It boils at  $170^{\circ}$  F., and has never been frozen. Alcohol is the interesting ingredient of the many intoxicating liquors in common use—brandy, whisky, wine, beer, etc.

Alcohol is produced by fermentation. Any saccharine juice, when exposed to the air for a short time and then to a temperature of about  $85^{\circ}$  F., soon enters into fermentation, and a large quantity of carbonic acid is given off; the sugar disappears and alcohol is found in its place. Let us take grape juice, for example. This contains a liberal quantity of grape sugar, and when exposed to the air and a proper temperature fermentation soon results. The sugar disappears and alcohol is found in its place. The fermented liquid in this case is called wine, and contains from 7 to 10 per cent of alcohol, according to the amount of sugar in the grape juice used in the process. Wines are sometimes bottled before fermentation is completed; then we have a wine containing a small per cent of alcohol, and more or less sugar—a sweet, sparkling wine. Champagne and sparkling catawba are examples of this kind of wine. While water makes up the bulk of all wines, and alcohol is an interesting ingredient, they also contain acetic acid, tartaric acid, and sometimes tannic and carbonic acid. Wines containing no sugar are called dry wines. Of the dry acid wines catawba is the best. Kelley-Island catawba is as good as can be had.

Beer is made from malted barley, hops being added; and it is the product of a very slow fermentation in cool cellars. It contains from 2 to 3 per cent of alcohol; extract of malt, from 5 to 10 per cent; a little carbonic acid, lactic acid, and a small quantity of potash and soda salts. The great bulk of beer is water.

Ale is made by the same formula as beer, but the process is

different; the fermentation is as rapid as possible, and the amount of alcohol is greater than in beer, reaching from 5 to 7 per cent. Ale is similar to beer in its make-up, the principle difference being the greater amount of alcohol, and a smaller amount of sugar.

Brandy is made by distilling the wine made from grape juice. It contains from 50 to 60 per cent of alcohol. The rest is water, except a little volatile oil and ether peculiar to wines.

Whisky is made from a mash of corn, rye or wheat, and contains from 30 to 50 per cent of alcohol, traces of fusel oil, and sometimes acetic, butyric and valerianic acids. Old brandies and whiskies are regarded as being better than newly-made specimens. Not that they necessarily contain any more or less alcohol, but the reaction of the acids they contain upon the alcohol results in the evolution of peculiar ethers, greatly modifying their flavor and appearance, and even their local and constitutional effects.

Absolutely pure alcohol is only obtained by careful and repeated distillation, and the adoption of methods where substances having a great avidity for water are used. These processes are not of particular interest to us, the general make-up and effects of the alcoholic liquors in common use being of more importance. We have referred to their origin, chemical composition and properties, and it now remains for us to name their place and power, their proper relation to living and dead things, their merits and demerits, their potency for evil or for good, their value as food and virtues as medicines.

In the arts, alcohol is almost indispensable. In pharmacy, it is one of the most important articles employed. As a general solvent and menstruum and preservative it has no equal. This said, and we have expressed the whole truth about alcohol as regards its relation to things inanimate.

In our efforts to show the proper relations of alcohol to living things, especially the effects of alcohol upon the human subject, its place and power in health and in disease, its claims as a food and as a medicine, it becomes necessary to preface our investigations by a general view of the human organism—glancing at its composition, properties, capabilities, needs, manifestations, etc. We find that the principal elements of the human body are car-

bon, hydrogen, oxygen and nitrogen. Then we have sulphur, phosphorus, chlorine, sodium, potassium, calcium, magnesium, iron, and another or two in minute quantity. We know that it has been said that the human body is an epitome of the universe, and that every element found in heaven and earth may be found in the human body, and that the failure to establish this hypothesis as a fact, up to the present, is only negative evidence. But we can not endorse this view. The different articles above named, in various combinations, make up the solids, fluids and gases of the human body. This living being, surrounded by a proper element, pure air, and supplied with suitable nourishment—food—is capable of maintaining a healthy existence for fifty or one hundred years. If we examine this body carefully we find that a uniform standard of health is expressed by each organ and tissue; and taken as a whole, we have uniformity of expression by different individuals. For instance, we find a uniform temperature; a likeness of color of mucous membranes; harmony in the pulse or heart-beat, respiration, etc. Pursuing our observations a little further and we find the whole body—some parts more than others—in continual motion. A certain amount of nervous, muscular, or secreting tissue is continually wearing out, crumbling down, and for the time being is rendered useless to the human organism. We call this waste, and this worn-out material must be suitably removed through the various emunctories, while its place must be continually supplied by fresh material. This renewal of tissue is accomplished by the blood—arterial blood. This waste is constant, and the supply must not only be as constant, and proportional in amount, but also of a *certain quality*. To nourish, blood must be pure. Having nourished, the blood becomes impure, and loses its vitality. In every circuit it makes it loses largely both in quality and quantity, and its loss must be made up. This is done, for the most part, through the stomach. Food is taken, properly digested, absorbed from the stomach and other parts of the alimentary canal, enters the veins, is purified by passing through the lungs, and is finally appropriated—goes to make new tissue. From all these changes result motion, heat, force. An equilibrium of these processes of waste and nutrition is health. When the waste

is in excess—the tissues crumbling down too rapidly—an excess of heat is generated, the individual has what we call a fever; and, unless this process be controlled, the result is death. It may be tedious, but certain dissolution is the end. On the other hand, where the waste is normal and the supply deficient, the individual fails in health and dies prematurely. In order that animal life be sustained and a condition of health maintained, a suitable supply of nourishment—called food—must be furnished and appropriated.

Having said this much, we are ready to consider the matter of food; and, as we go along, investigate the claims of alcohol to a place among alimentary substances. The inquiry arises, what constitutes food? We might answer, whatever supplies a real want of the body is, in fact, a food. This would include water, air, bread, etc. But we generally use this term in a more restricted sense, embracing as articles of food such substances as are used as aliments, taken into the stomach either in a solid or fluid form, for the purpose of replenishing the system and keeping up an equilibrium of its forces. The human body being made up of a variety of elements, it will be seen that in order to sustain it the food furnished must be of such a character as to supply every deficiency that may obtain. Dr. Hunt puts it right when he says, "Any article to rank as food must be convertible into tissue or force, in such a way as to contribute to healthy vitality, and aid the body in the performance of its normal functions. This includes that energy which is needed in the execution of its own processes of nutrition and repair, and that which must be generated to fit it for the expenditure of proper force in its contact with the world about it. So definite is the relation between the human system and the food by which it is sustained and propelled, that in respect to most of them we are not left in doubt. If we take any of the indisputable aliments and subject them to a chemical analysis, and then apply the same process of examination to human material, we are not slow to trace the correspondence of the two." Fowne says that the food employed for the nourishment of the body must have the same, or nearly the same, chemical composition as the body itself. This is true in the abstract, but we must not understand by this that *every* ar-

ticle, in order that it be considered food, shall contain *every* element found in the human body. This would be a great mistake, and some extremists have been inclined in this direction. Extreme grounds weaken any cause. The truth is, we have two classes of food: nitrogenized food and non-nitrogenized food. In albumen—which is found in abundance in eggs—and in beef and milk, we have good examples of nitrogenized foods. In his great work upon food Pavy says: “It stands to reason, that for the growth and repair of the various textures of the body, as these have nitrogen forming an essential ingredient of their constitution, *nitrogenized compounds must be supplied.*” Non-nitrogenized compounds are not capable, of themselves, of sustaining life. As examples of non-nitrogenized compounds, we have the fats, sugar and alcohol. These contain carbon, oxygen and hydrogen. Pavy says, notwithstanding nitrogenized compounds are positively necessary to sustain life, there is every reason to believe that fat is essential to tissue development. It seems to be intrinsically mixed up with nitrogenized matter in the animal textures. Fat, therefore, takes rank as a nutrient, no less than as a calorific principle. While nitrogenized principles constitute true elements of nutrition, it neither follows nor appears likely that they are limited to this purpose, for they undoubtedly aid in keeping up the temperature of the body. And while fats—which are non-nitrogenized principles—are undoubtedly important calorific elements—heat-producing compounds—and while they cannot of themselves supply everything that is required for tissue development, they nevertheless take part in the process.

Now this leads us directly to the consideration of alcohol as a food; and like the fats and sugar, it is regarded by some as belonging to the non-nitrogenized class of food. Is it a fact that alcohol can be regarded, under any circumstance, as a food? This is an important question, and many may be surprised to learn that after so many years of patient investigation and impatient speculation this should still remain an open question. But it is nevertheless true, and we find men of talent, men of genius, on both sides of the continent, taking opposite sides of this question. One says it is a food; another says it is not a food; while still another says it may be a food, limiting it to certain circum-

stances, where it may contribute a mite in the absence of more appropriate articles.

Liebig contended that alcohol stood only second to fat as a respiratory food. He held that it was consumed in the body by oxidation, like other non-nitrogenized elements. From the first, Liebig's theory met with general and unquestioned acceptance. Lallemand, and others, discovered, however, that alcohol passed off from the body in an unchanged state after being ingested. It was observed that when alcohol had been administered it was recognizable in the pulmonary and cutaneous exhalations, as well as in other excretions. This discovery supplied the ground for the denial that alcohol constitutes a food.

Dr. Anstie, in his work upon stimulants and narcotics, throws many doubts upon the soundness of the opinion of Lallemand and others, who take the ground that alcohol—all that may be taken—passes through the body unchanged. We have no doubt, considering the diffusible property of alcohol, that, in different cases, different proportions of alcohol do pass off in this way, and yet the great bulk of the amount taken, provided no more than an ounce or an ounce and a half be taken in twenty-four hours, is certainly used up—oxidized—in the system. If this be the case (and the evidence before us certainly justifies the conclusion), then it may fairly be assumed that the oxidation attending the destruction of alcohol in the system results in a corresponding liberation of force. But if more than an ounce or an ounce and a half be taken in twenty-four hours, the excess is eliminated as alcohol, by the lungs, skin, kidneys, etc., and in proportion to the amount taken exhausts the individual, and must be injurious.

Admittng the assumption that alcohol may be oxidized in the system, and that under certain circumstances it may, in part, take the place of more appropriate respiratory food, this does not settle the question as to its general *utility*—not by any means; for while it may be used up, in part, by the system (and we need not doubt this), the effect produced upon the system by its presence upon mucous surfaces and in the blood may be of such a damaging character as to greatly limit its proposed valuable properties as a calorificent element in food. Let us examine this matter closely. No physiologist of repute will claim for alcohol

that it is a substitute for the proper non-nitrogenized foods—fat and sugar. All that can possibly be claimed for it is that it may take the place of these, but in doing so a great loss is sustained; for while the temperature may be kept up for a short time, the effect will not be permanent. There is nothing in the alcohol that is in the least reparative, and under its continued influence the tissues certainly suffer loss in both weight and vitality.

That alcohol is, in a certain sense, a poison nobody denies, that we know of, for any agent capable of producing morbid, noxious or dangerous effects upon anything “endowed with life,” is considered as poison. The only question is, how does alcohol act as a poison—in what way does it produce morbid, noxious or dangerous effects upon the human system? When taken internally its first effects are upon the mucous coating of the stomach and its secretions. Alcohol approaching purity is seldom taken into the stomach. To make it at all tolerable to the stomach it must be largely diluted. But thus modified its primary effects are quite different from those generally suspected by people who are in the habit of drinking moderately or to excess. First, the natural juices of the stomach are impaired, partially coagulated and rendered incapable of filling the offices for which they were intended. On the lining membrane of the stomach—the mucous membrane—alcohol acts as a direct stimulant, or irritant, and may, at first, if taken in small quantities, and greatly diluted, do but little harm. But let the dose be more liberal and frequently repeated, especially if the beverage is somewhat concentrated, like whisky, and we soon have congestion and inflammation instead of simple stimulation. The mucous membrane assumes a dark, red color, is very much thickened, and its functions greatly impaired. The appetite becomes capricious, digestion retarded or perverted in many ways, and in some cases the food taken is rejected, mixed with foul and loathsome secretions which are thrown out in excess by the mucous coat of the diseased stomach. In the habitual drinker, the stomach measurably fails, or ceases to perform the functions of a digester of food, but assumes more of the character of a sponge, through which beer, whisky, and other fluids filter into the general system. The patient,—we call him a patient, for every drinking man is sick—is a con-

firmed dyspeptic, troubled continually with heart-burn, gnawings at the stomach, sour eructations, etc. No wonder the drinking man has a bad breath. If young ladies would meet fragrant breezes at the threshold of their future homes, they should beware of men who touch, taste or handle this unclean thing.

But the local effects of alcohol upon the stomach—which we have barely hinted at—are of small importance compared with its damaging effects to the blood, liver, kidneys and nervous system. Let us think of this matter a little. What becomes of alcohol after it enters the stomach? The greater portion of it is very speedily absorbed by the veins and carried into the general circulation. It poisons the blood as it goes, very soon reaches the nerve centers, and if the dose be large enough, immediate apoplexy and sudden death are the results. Let a man unused to it drink a quart of brandy as soon as he can swallow it, and he dies on the spot. A blow on the head would scarcely do the work more speedily. But these are startling statements. How does alcohol poison the blood? Mixed with this circulating fluid it becomes less coagulable, favoring a tendency to hemorrhages of every kind. Let an old toper fall very sick with dysentery or typhoid fever, and all our experienced physicians know how hard it is to restrain the hemorrhages and fluxes incident to these diseases. We know the prognosis is unfavorable every time. And let us take warning now, for if any of our readers imagine that the daily use of alcohol will prolong their lives, or lessen the risks of being attacked by disease, or in any way protect them after falling sick, they are laboring under a great delusion, and the sooner they abandon these premises the better.

But we go on with these blood changes. In our preface we referred to the processes of waste and nutrition. We learn that the waste material of the body, in health, is taken up by the blood circulating through the veins, and by them it is carried to the lungs to be worked over, oxidized and renewed, or it is cast off through the various emunctories. The blood, purified by oxidation in the lungs, or through the various excretory organs, goes on to the heart, and from thence through the arteries to all parts of the body for the purpose of nutrition, repairing the tissues.

Now, we can all see how necessary it is that this blood shall be pure in order that the repair may be perfect, the new tissues healthy. We can also see how important it is that the food taken, the water we drink, all that goes to make up the blood that nourishes the body, shall be pure and harmless. But how does alcohol interfere in the processes of waste and repair? Going back to the lungs, we call special attention to what takes place in them in conditions of health. As the venous or impure blood reaches the lungs, heavily laden with exhausted, worn-out material, or fatty matter, it meets with the air which has been taken in by the windpipe. This air parts with its oxygen, which unites with the carbon and hydrogen of the waste and fatty matter in the blood, purifying it, and fitting it for all the purposes of nutrition. Now let us send an inordinate amount of peculiarly combustible material, like alcohol, for instance, from the stomach to the lungs, along with all the waste that naturally falls in with each circuit of the blood. What do we observe? We find that the oxygen of the air has a greater affinity for the alcohol than it has for the waste material, and if a liberal quantity of alcohol has been taken, more than an ounce or an ounce and a half in twenty-four hours, the whole or a great part of the oxygen is consumed by it, and the impurities in the blood, which should be consumed or changed by the oxygen, go on unchanged, and we actually have impure venous blood circulating through the arteries, and capillaries. Continue this a few hours, and no wonder the man looks purple in the face, for he is virtually dying for want of pure air, like a man with a rope about his neck. He takes in a quantity of air sufficient, but the alcohol meets it and exhausts it before it has time to purify the blood. In this way alcohol poisons the blood, taking the oxygen of the lungs to itself, and leaving no sufficient supply for oxidizing the waste matter in the blood. Of course some men live for many years under these embarrassing influences, and some people imagine themselves growing healthy from the use of alcohol. This waste material retained in the blood seems to be, in some cases, converted into fat, and the blood of drinking men is found to contain an unusual amount of fatty contents, and other noxious matter, apt to take the place of healthy tissue. The noxious matters retained in

the system give to the breath, perspiration, and the excretions of the drinking man the foul and disagreeable odor so frequently observed. It is the odor arising from rotten material. We find the inebriate showing plain signs of perverted nutrition continually, ill-nourished, flabby, weak, watery in the tissues, sodden and sad in color. Sometimes he grows lean and lank; sometimes he gathers unhealthy fatness, the fat being put down in wrong places, and found where it should not be. Internal accumulations of fat oppress the vital organs, and the partial conversion of muscular and other tissues into fat, by the continued use of alcohol in some form, constitutes some of the most serious diseases to which mankind is subject. People who are apparently growing fat and healthy under the influence of alcohol may not be aware that they are steadily and surely laying the foundation for disease. If we would have good digestion, perfect nutrition, a complete renewal of tissues throughout the body, manifested by solid muscles, a clear skin, cheerful countenance, a sweet breath and quiet slumbers, we must abstain from the reckless use of alcohol in every shape and form.

The effect produced upon the liver by the habitual use of alcohol is very clearly and concisely stated by Bartholow: "As alcohol is a very diffusible substance, it enters the blood with great facility, and probably almost all of that taken into the stomach passes into the blood from this organ, and does not reach the small intestine. The liver is consequently the first organ, after the stomach, to be influenced by the ingested alcohol. The blood of the portal vein, rendered more highly stimulating by the presence of alcohol, increases for the time being the functional activity of the liver-cells, and, as is the case with the stomach, a more abundant glandular secretion follows. Frequent stimulation and consequent over-action result in impairment or loss of the proper function of the part, as is the universal law. The hepatic cells, over-stimulated, produce an imperfect product; they are affected by fatty and atrophic changes, and shrink in size; and the connective tissue of the liver undergoes hyperplasia. The first result of the structural alterations is an increase in the size of the organ, but with the shrinking of the hepatic cells, and the contraction of the newly-formed connective tissue, the liver

becomes smaller, nodulated and hardened. To this change the term *cirrhosis* has been applied."

This condition is accompanied with depression of spirits, languor, dyspepsia, dropsy, and a train of symptoms familiar to all physicians of experience.

In some cases alcohol disorders the functions of the kidneys before much injury results to the liver. And some people cannot tolerate stimulants for any length of time; they soon suffer from pain in the region of the kidneys, nephritis, diuresis and cystitis.

We have already hinted at the effect of alcohol upon the nervous system. We know how it may produce death by shock, as it were. But the dose may not be large enough to kill at once. A little short of a condition of apoplexy we find a man with suffused face, laboring pulse, heavy noisy breathing, and total insensibility. The alcohol absorbed has reached the nerve centers, and has almost paralyzed their functions. Reaching the brain still more gradually and in smaller quantities, the alcohol acts as a stimulant at first. The intellectual functions are excited, as shown by gaiety, talkativeness, animated expression, and increased rapidity as well as variety of thought. We all know the final results in such cases; on, and on, and the individual is drunk, drunk. Repeated debauches like this, and we have acute delirium manifested, and finally delirium tremens proper, when the man is no longer his own master. It is useless for us to extend this picture. The details of drunkenness we have all heard, and many of us witnessed time and again. But we should remember that, in every case, from the very first, the paramount function of voluntary control is greatly impaired. The mind suffers in its best part, and no man, under the influence of alcohol, is as safe as when at himself—in a natural condition. To be sure, we may meet with men who have drank so much and so long that they are almost dead without alcohol, and in order to bring them up to anything like their former standard of health and intelligence, *they must have stimulants*. What a deplorable condition! These men are never safe. For careful thought, honest work, safe advice, prudent conduct, good counsellors at law, safe physicians at the bedside, and faithful fathers and mothers, we must have *temperance men and women*.

Alcohol is an extremely popular article as a medicine in this country; and the better people like it when well, the more they think of it as a medicine when a little sick. Many people would rather be slightly ill than do without stimulants. But can we really make any use of alcohol as a medicine! While we cannot deny it a place among medicines, it is certainly one of the poorest articles in the *materia medica*. By a medicine we mean any substance that has the property of aiding in the repair of the system, mitigating pain, and throwing off disease. A medicine is valuable in proportion to its power to accomplish these ends speedily and surely, without risk to the dispenser or subject. In simple cases, where alcohol in some form is frequently used, either as a temporary stimulant or carminative, some good may result, and but little harm follow. It may be used temporarily as an anæsthetic—as a means to lessen sensibility to pain. In small surgical operations it answers very well to bring about a feeling of indifference, and the patient willingly suffers what he could not very well bear without stimulants. It may be used, in small doses, to arouse the system in cases of shock from fear, sudden injury, etc. In small doses, frequently repeated, alcohol increases the action of the heart, and a general rise of temperature is the result. In some forms of fever—typhus and typhoid especially—there is frequently great nervous depression, under which the vital functions become faint, and are apt to cease. In such cases we resort to stimulants. Alcohol keeps the nervous power active, and this excites the vital force to work. The alcohol may not actually generate force, but it excites into activity the vital force on hand. We see the patient reviving under its influence—growing better hour by hour—health returning, the eye more steady and clear, the pulse less frequent and stronger, the tongue more moist and clean, the breathing easier, the sensations all more comfortable. This alcohol is not feeding the patient as one might suppose, but it is stimulating the nervous system—doing just what would create disease in the well man, but in this case only brings the excitement of the nervous system within the borders of health. It spurs the nerves and nerve centers, keeps them awake, and prevents the vital functions from utterly failing. But the vital force would soon be

used up in this way, become entirely exhausted. And there is always a risk of this. But we should endeavor to have the stomach take nourishment as soon as possible, for without food alcohol will not sustain any patient very long. While we realize in alcohol the capability of acting as a stimulant, this sphere of its use is exceedingly limited, both as to time and amount. In all cases where, day after day, the effect of alcohol is sought, we are in danger of some of the accompanying ills of this drug. Where too much is given the vitality of the patient is sure to be exhausted. Prof. Loomis very appropriately remarks that, "even where there is need to sustain heart-power and to use some form of stimulants, the following rules should be observed: They should never be administered indiscriminately—that is, never give a patient stimulants simply because he has typhoid fever; 2d, Where there is reasonable doubt as to the propriety of giving or withholding stimulants, it is safer to withhold them, at least until signs which indicate their use become more marked; 3d, In every case, but especially where stimulants are not clearly indicated, watch carefully the effect of the first few doses. There are few whose experience in the treatment of typhoid fever is such as to enable them to positively determine, from the appearance of the patient, when the administration of stimulants should be commenced." Unless the pulse becomes fuller and more regular, the restlessness and delirium less, the tongue more moist and the patient more intelligent, the remedy is contra-indicated. Finally, while appreciating the value of alcohol under certain circumstances, we daily find ourselves more and more inclined to omit it and rely upon water, quinine, ammonia, essential oils, milk, eggs, and other nutriments, to repair the waste of tissue and hold up the nervous system.

Regarding the special indications for alcohol, but little can be added to what has been said. As to the best form for its administration, some preference should be observed. Ordinarily, pure alcohol, in drachm doses, largely diluted with water, and repeated every three hours, will meet the indications in cases requiring this drug. Where speedy effects of this stimulant are required, then half-drachm doses repeated frequently—every half hour—may be prescribed. In special cases, where an acid

is demanded, some dry wine may be ordered. In cases of yellow fever we use champagne, with ice. In other cases, where the stomach is inclined to be rebellious and the person a little choice in his tastes, brandy may agree better. And in some cases, especially among habitual drinkers, whisky seems to agree better than any other form of alcohol. There is an influence exerted by the peculiar ethers in whiskies and brandies not possessed by pure alcohol, and they frequently agree with patients when pure alcohol cannot be tolerated.

Egg-nog is one of the very best forms for the administration of stimulants ever devised, and in some cases of typhoid fever, lingering cases of dysentery, and other diseases of a similar character, where stimulants, and nourishment in a liquid form are required, this preparation may be used to great advantage. We prepare egg-nog as follows: Take two fresh eggs; fresh, unskimmed milk, one pint; powdered sugar, two heaping tablespoonfuls; brandy or whisky, four tablespoonfuls. Beat the yolks of the eggs till perfectly smooth, then add, gradually, the brandy or whisky, whichever may be preferred. The mixture should be briskly stirred while the spirit is being added. Next add the milk and sugar, and stir till the sugar is dissolved. Now beat the whites of the eggs to a stiff froth, place it on the top of the mixture, and upon this grate a little nutmeg. This makes first-class egg-nog, and may be given to invalids requiring stimulants and a fluid diet, in doses of one to four tablespoonfuls every one or two hours. In diphtheria we use egg-nog freely.

Of all the alcoholic liquors, ale and beer are the least harmful; and they may be used in some cases to advantage. But their use should be carefully restricted, for too much may be taken, and they may be continued beyond reason. In fact physicians frequently order them in too large doses; but people more frequently drink them in unreasonable quantities. If we would reap the full benefits of these liquors we must use them by rule. From two to four ounces of ale or beer is enough for a single dose, and this should not be repeated too often. The small quantity of alcohol in these malt liquors may be turned to good account, accompanied, as it is, with more or less nutritive material, provided the doses are not too large. But

if too much ale or beer be taken, then the excess of alcohol is thrown off as alcohol, and in this effort the vitality of the patient is exhausted more than built up.

“But is not a free use of beer good for weak, nursing women? It increases the lacteal flow, we are quite sure.” Now, this question is frequently put to us, and our invariable reply is, that as distill slop is not fit for cows, the milk from cows fed upon it not being healthy, not even suitable for adults, it is not at all reasonable to suppose that the mother’s milk would be good for her infant if made of beer. We feel quite sure that scores of children die annually, in our cities, for want of appropriate nourishment at proper intervals. A woman who drinks much beer soon eats less nourishing food. She may, however, eat as much or even more, for a few days; but if she keeps up the habit of drinking she soon fails to eat as much as before, but she drinks more—not only beer, but water, tea, coffee, or whatever she fancies. As she lays aside nourishing food and takes up slop, the *quantity* of milk may be increased, but the quality is seriously impaired. Let this mother push this drinking a little further, and the nursing child gets sick. How could it be otherwise? for the mother is sick, her milk is diseased, of poor quality at best. And women who drink much beer are not generally so regular in their habits as more sober people, and they are apt to let their children go hungry, then allow them to gorge themselves. Sobriety, an even temper, regular habits, good, sound, nourishing food, is our advice to nursing women.

In cases of nervous depression and feeble circulation, we sometimes see in diseases of persons who have been addicted to drinking, we should always resort to the particular form of stimulant the patient has been used to, let it be wine, brandy, whisky, ale or beer. And such people require more than ordinary cases; and they must have stimulants, if we expect to restore them to a comparatively healthy condition in any reasonable length of time.

From a physiological standpoint, we hold that the above teaching is sound. And we would not have anybody understand that these views are in any way at variance with the cause of temperance. Not at all. It should be known everywhere that alcohol

must be handled with great care. It is not, nor can it be, a substitute for food. But it is a poison greatly to be dreaded, and can be used as a medicine only in skillful hands, and then, in many cases where it is still used, other drugs recently introduced are far more efficient, besides a great deal safer. It has no power to avert disease when taken as a beverage in health, but, on the contrary, it renders people more liable to be attacked, and its continued use greatly reduces their power of endurance, and they are not nearly so able to resist disease when it comes. Its demoralizing influence, and the financial distress resulting from its use as a beverage, or luxury, can never be estimated. As physicians, we should look with scorn upon the practice of retailing intoxicating beverages under the cover of medicines. This is a most pernicious practice, carried on, we are sorry to say, by many physicians and druggists, to the mutual profit, financially, of both parties. The physician prescribes and the druggist fills the prescription. *O tempora! O mores!*

# ELECTRICITY

—IN—

## MEDICINE AND SURGERY,

By GEO. C. FITZER, M. D.

---

This Book is meeting with great favor. It teaches the use of Electricity in the treatment of all diseases where this measure is available. It treats of electro-diagnosis, tells how to detect feigned sickness, how to make tests for life or death in doubtful cases, how to revive people suffering from asphyxia, or from over doses of chloroform taken by inhalation, how to restore those who are suffering from opium or morphine poisons, and how to cauterize with Electricity. Galvanism, Faradism, and Static Electricity are fully explained, and their particular uses clearly pointed out. Read what the critics say about it:

[From the Medical Register, New York.]

"This book is a practical exposition of the principal facts of the subject under consideration, and as a handbook for physicians will no doubt be found very useful. It is prefaced by a short historical account. Descriptions of the various batteries that are considered the best are given, with explanation for their use and the modes of applying electricity in treating disease. Dr. Pitzer condemns the common use of electricity by the people themselves, as a practice that does more harm than good, the instruments generally used in this way being cheap and inefficient, the currents are not properly applied, and consequently the good results looked for are not realized. We quote the author's own words, and hope, with him, to see the desired reform: 'It is to be hoped that every intelligent physician in the country will discourage the foolish practice of advising families to buy batteries, and use them upon the different members of the household who may happen to complain of pains and aches here and there. Such a practice is exceedingly reprehensible.' The author is a well-known professor of St. Louis, and editor of the *American Medical Journal*."

[From Galvano-Faradic M'fg Co., New York.]

"We think we have never seen or read a more concise work, and we think it fills a great need. We hope that it will have a large sale.—Respectfully yours, F. C. BARTLETT, Sec'y Galvano-Faradic Manufacturing Co., New York City."

[From the Independent Practitioner, New York.]

"The object is to furnish the medical student with the principal facts of this subject which to-day is becoming more and more prominent. The practitioner who has not studied clinically the modus operandi of electrical manipulations, will find concise rules for the application of this valuable remedy. Indeed, to one who has employed electricity, the details may seem too simple and too lengthy. But this, to-day, is a fault on the right side; and as Dr. Pitzer writes for novices, whether students or physicians who have paid but little attention to this branch, he certainly deserves great praise."

[From the Common School Visitor and Teacher Kirksville, Mo.]

"We have examined this book thoroughly, and find that it is so plain and simple that, in our judgment, a mere novice may be able by its assistance to commence the use of electricity in the treatment of disease. We should consider it an invaluable aid to the young physician. Students and teachers who desire to investigate the power and use of electricity, as applied to the human body, can find no better volume for their use than this one, written by a man of vast experience and accurate knowledge."

[Jerome Kidder Manufacturing Co., New York.]

"The book contains valuable information, and is worthy the consideration of the medical profession."

---

Second Edition, Much Enlarged and Improved. Price, \$1.00.

---

Address the Author,

DR. GEO. C. FITZER,

1110 Chambers Street, St. Louis, Mo.



